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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/029,035	12/28/2001	Young Ho Bae	2658-0280P	3483
2292	7590	02/03/2006	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			KACKAR, RAM N	
			ART UNIT	PAPER NUMBER
			1763	

DATE MAILED: 02/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/029,035	BAE, YOUNG HO	
	<b>Examiner</b>	<b>Art Unit</b>	
	Ram N. Kackar	1763	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 December 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) 13 and 14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 May 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/5/2005 has been entered.

### ***Drawings***

2. The drawings were received on 5/11/2005. These drawings are not acceptable. The drawing changes in Fig. 10A, 10B and 10C are neither supported by specification nor by original specification and original drawings. The original drawings for Fig 10A to 10C had the substrate horizontal but covering the groove. Since this was not consistent with rest of the drawings where the groove was shown outside the substrate the drawings were corrected in 3/1/2004 amendment. The drawings were again amended in 10/19/2004 amendment to show the bend of the substrate by 15 degrees with respect to horizontal and 85 degrees from vertical while loading to the susceptor. However latest amendment to show an angle of more than 90 degrees from vertical is unclear. It is noted that applicant has not corrected the problem as required in the last office action dated 8/3/05. Applicant's arguments regarding support in the specification are not understood since the angle of the substrate with the susceptor is not 85 either from the vertical axis or from the horizontal axis.

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Further the subject matter of this application admits of illustration by a drawing to facilitate understanding of the invention. Applicant is required to furnish a drawing under 37 CFR 1.81(c). No new matter may be introduced in the required drawing. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d).

Applicant claims that the robot arm slides the glass substrate on the susceptor. Since the robot arm moves the substrate at the top of the susceptor where the lift pins lift and support the substrate, it is not clear how the substrate slides on the sliding portion. Drawings to indicate sequence of load and unload using claimed sliding mechanism is required for proper understanding. It is further required that the location and planer structure of sliding portion and the groove are shown clearly with numerals and explanation in the specification regarding numbered parts. It is further required that no new matter is added.

### *Specification*

3. 35 U.S.C. 112, first paragraph, requires the specification to be written in "full, clear, concise, and exact terms." The specification is replete with terms that are not clear, concise and exact. The specification should be revised carefully in order to comply with 35 U.S.C. 112, first paragraph. Examples of some unclear, inexact or verbose terms used in the specification are: "slide miss".

Further as discussed above the specification is not clear on the sequence of load and unload using claimed sliding mechanism, planer structure of sliding portion and the location of grooves. It is further required that no new matter is added to the explanation of above items.

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-12 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. In this instance sliding mechanism for claimed load and unload of the substrate is not described by drawings and specification. Specially missing is the description and drawing to indicate sliding portion and its distance from an edge of the groove and the two planes of the sliding portion as claimed in claim 12. It is not understood how the substrate could slide on two surfaces which are not coplanar.

Further claim 9 that depends on claim 1 recites that the substrate is supported on the lift pins. Thus it is not understood how the robot arm slides the substrate on the susceptor and still positions it on the top of the lift pins. An enabling disclosure is needed for this too.

***Election/Restrictions***

5. Newly submitted claims 13 and 14 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: The newly submitted

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claims are directed to a method of positioning a glass substrate by sliding on a susceptor which is an independent and distinct invention from the examined apparatus claims.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 13 and 14 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. **Claims 1-3, 9, 11 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Tepman et al (US 5589224).**

Tepman et al disclose a vacuum deposition apparatus for PVD, CVD, sputtering, ion implanters etc (Col 1 lines 10-19), lift pins (Fig 1-30), robot arm (Fig 4 and Col 2 lines 13-16) and groove around susceptor to collect deposition so that build up on the surface of the susceptor may not cause problem by sticking to the substrate (Fig 3-38 and Col 4 lines 54-63).

Regarding “robot arm sliding on the susceptor”, it would be an intended use since standard robot arm would be capable of sliding a substrate on the susceptor.

Regarding claims 2 and 3, Tepman et al disclose more than 10mm distance from the groove (Fig 3-38) for sliding since entire surface on the susceptor (which would be more than

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200 mm for a standard substrate of 200mm) under the robot arm could be used for sliding a substrate if intended.

**8. Claims 1-3, 9, 11 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by DuBois et al (US 5855687).**

DuBois et al disclose a vacuum deposition apparatus for CVD with heatable susceptor (Col 3 line 22-42 and lines 38-40), lift pins and robot arm (Col 5 lines 49-51), groove around susceptor to collect deposition so that build up may not cause problem by sticking to the substrate (Col 4 lines 43-48).

As discussed above robot arm sliding on the susceptor would be an intended use.

Regarding claims 2 and 3 here too the area for sliding is more than 10mm from the groove (Fig 3-44) to allow the substrate to slide.

***Claim Rejections - 35 USC § 103***

**9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:**

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**10. Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicants admitted prior art (AAPA) in view of Tepman et al (US 5589224) or alternatively in view of DuBois et al (US 5855687).**

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Applicants admitted prior art (AAPA) as disclosed in Figs 1 to Fig 4 A, B, C and D and the specification discloses all limitations of these claims except the groove to collect material disposed on the susceptor.

Tepman et al disclose a vacuum deposition apparatus for PVD, CVD, sputtering, ion implanters etc (Col 1 lines 10-19), lift pins (Fig 1-30), robot arm (Fig 4 and Col 2 lines 13-16) and groove around susceptor to collect deposition so that build up on the surface of the susceptor may not cause problem by sticking to the substrate (Fig 3-38 and Col 4 lines 54-63).

Similarly DuBois et al disclose a vacuum deposition apparatus for CVD with heatable susceptor (Col 3 line 22-42 and lines 38-40), lift pins and robot arm (Col 5 lines 49-51), groove around susceptor to collect deposition so that build up may not cause problem by sticking to the substrate (Col 4 lines 43-48).

Therefore it would have been obvious for one of ordinary skill in the art at the time of invention to have grooves on the susceptor in order to avoid problems of substrate sticking.

**11. Claim 4, 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tepman et al (US 5589224) in view of Rempei Nakata (US 5119761) or alternatively DuBois et al (US 5855687) in view of Rempei Nakata (US 5119761).**

Tepman et al or DuBois et al is discussed above.

Tepman et al or DuBois et al do not disclose the susceptor to be made of Quartz.

Quartz susceptors are common for thermal processing for its thermal insulation properties.

Rempei Nakata discloses a quartz susceptor (Fig 12-106 and Col 1 lines 44-49).



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Therefore it would have been obvious for one of ordinary skill in the art at the time of invention to have a susceptor of quartz for its excellent thermal properties of insulation.

**12. Claims 5-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tepman et al (US 5589224).**

Tepman et al disclose groove but do not disclose different shapes of the bottom of the groove. Since the purpose of the groove is to collect film forming material and applicant has not disclosed any special advantage of a particular shape at the bottom they are considered art recognized equivalent and therefore obvious.

The courts have held *regarding change in shape*: It was held in *re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966) that the shape was a matter of choice which a person of ordinary skill in the art would have found obvious absent persuasive evidence that the particular shape was significant. (Also see MPEP 2144.04(d)).

Similarly, *regarding change in size/proportion*: It was held in *re Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984) that where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device.

***Response to Amendment***

Applicant's arguments filed 12/5/2005 have been fully considered but they are not persuasive.

Applicant argues again that Tepman et al do not have any structure that can be equated with a sliding portion.

However a surface on the susceptor is disclosed where a substrate on robot arm could slide if the robot arm bends due to the heavy load of the substrate. It is inherent that the entire surface on the susceptor under the robot arm could be used for such sliding.

Tepman et al and DuBois et al have similar structure the response to applicant's arguments in these regards is same.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ram N. Kackar whose telephone number is 571 272 1436. The examiner can normally be reached on M-F 8:00 A.M to 5:P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on 571 272 1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'R. Kackar', with a horizontal line extending to the right.

Ram Kackar  
Primary Examiner AU 1763